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ZPC-9000 USER GUIDE

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Federal Communication Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection. This equipment generates, uses, and can emit radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: Shielded cables must be used in order to comply with emission limits. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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USING THIS GUIDE

This Guide is designed to help you build a reliable ZPC-9000 computer based on the ZPC-9000, Intel-865GV motherboard platform.

Chapter 1 – ZPC-9000 Introduction

This chapter provides a checklist of the items that ship with the ZPC-9000 unit and an introduction to the external connectors and indicators.

Chapter 2 – System Overview

This chapter includes an introduction to system specifications, the Motherboard layout, and chipset information as well as use of the external connectors.

Chapter 3 – Hardware Installation and Component Replacement

This chapter explains how to prepare a Bare Bone ZPC-9000 for use and how to make the various connections to other computer components and peripheral items. It also instructs the end-user how to replace or upgrade components.

Chapter 4 – CMOS Setup Utility

This chapter explains how to use the system setup utility that is stored in the ZPC-9000's firmware.

Chapter 5 – Drivers and Utilities

This chapter briefly describes the drivers and utility programs that are packaged with the ZPC-9000.

Chapter 6 – Service and Support

Provides contact information for Technical Support and product services.

Chapter 7 – Appendix A

Pin definitions for Motherboard connectors and jumpers.

Chapter 8 – Troubleshooting Guide

Provides troubleshooting tips for most common problems.

Table of Contents



www.cybernetman.com	I
FCC & CE COMPLIANCE	I
COPYRIGHT NOTICE	I
USING THIS GUIDE	III
CHAPTER 1 – ZPC-9000 INTRODUCTION	III
CHAPTER 2 – SYSTEM OVERVIEW	III
CHAPTER 3 – HARDWARE INSTALLATION AND COMPONENT REPLACEMENT	III
CHAPTER 4 – CMOS SETUP UTILITY	III
CHAPTER 5 – DRIVERS AND UTILITIES	III
CHAPTER 6 – SERVICE AND SUPPORT	III
CHAPTER 7 – APPENDIX A	III
CHAPTER 8 – TROUBLESHOOTING GUIDE	III
1. ZPC-9000 INTRODUCTION	1
1.1 UNPACKING	1
1.2 THE INDICATOR PANEL AND CONTROL BUTTONS	2
1.3 THE OPTICAL DRIVE SIDE	3
1.4 THE FRONT SIDE	3
1.5 THE REAR PANEL	3
1.6 SOFTWARE INSTALLATION OPTIONS	4
2. SYSTEM OVERVIEW	5
2.1 INTRODUCTION	5
2.2 SYSTEM SPECIFICATIONS	6
2.2.1 Hardware	6
2.2.2 Power Management	8
2.2.3 System Management	8
2.2.4 Software	8

2.2.5	<i>Environment</i>	8
2.3	BACK PANEL CONNECTORS	9
2.3.1	<i>DC-IN Connector</i>	9
2.3.2	<i>Serial Ports (COM1 & COM2)</i>	9
2.3.3	<i>PS/2 Mouse Port</i>	10
2.3.4	<i>PS/2 Keyboard or POS Port</i>	10
2.3.5	<i>Internal Fax/Modem Port (Optional)</i>	10
2.3.6	<i>Universal Serial Bus Ports</i>	10
2.3.7	<i>Security Cable Lock Slot</i>	11
2.3.8	<i>Parallel Port</i>	11
2.3.9	<i>VGA Ports</i>	12
2.3.10	<i>Audio Port Connectors</i>	12
2.3.11	<i>DVI/S-Video Ports</i>	13
2.3.12	<i>PCI Expansion Slot</i>	13
2.3.13	<i>Gigabit Ethernet (GbE) LAN Port</i>	13
3.	HARDWARE INSTALLATION & REPLACEMENT	15
3.1	BUILDING A BARE-BONE SYSTEM	15
3.1.1	<i>PHYSICAL ORIENTATION</i>	15
3.1.2	<i>REMOVING THE KEYTOP (Opening the Computer)</i>	16
3.2	MEMORY INSTALLATION	17
3.3	CPU AND CPU HEATSINK INSTALLATION	18
3.3.1	<i>CPU Installation Procedure</i>	18
3.3.2	<i>Removing the CPU and Heatsink</i>	19
3.4	INSTALLING PERIPHERAL DEVICES	20
3.4.1	<i>Installing an IDE Hard Disk Drive</i>	20
3.4.2	<i>Installing a Multimedia Device</i>	22
3.4.3	<i>Installing a 7-in-1 Card Reader USB Device</i>	23
3.4.4	<i>Installing a PCI Expansion Card</i>	24
3.4.5	<i>Installing a Fax/Modem card</i>	25
3.5	REMOVING THE KEYBOARD MATRIX & CONTROLLER PCB	26
3.6	REPLACING THE SYSTEM FANS	27
3.7	INSTALLING A REMOVABLE HARD DISK DRIVE	28
3.8	CLOSING THE SYSTEM	28
4.	CMOS SETUP UTILITY	29
4.1	ENTERING SETUP	30
4.2	CONTROL KEY DEFINITIONS	31
4.3	MAIN MENU HELP	31
4.4	CMOS SETUP UTILITY MAIN MENU	32
4.4.1	<i>Standard CMOS Features</i>	33
4.4.1.1	<i>IDE Devices Sub-Menu:</i>	34
4.4.2	<i>Advanced BIOS Features</i>	37

4.4.2.1	CPU Features Sub Menu.....	38
4.4.2.2	Hard Disk Boot Priority Sub Menu.....	39
4.4.3	<i>Advanced Chipset Features</i>	42
4.4.4	<i>Integrated Peripherals</i>	45
4.4.4.1	Onchip IDE Device Sub Menu	46
4.4.4.2	Onboard Devices Sub Menu	48
4.4.4.3	Super I/O Device Sub Menu	50
4.5	POWER MANAGEMENT SETUP	52
4.6	PNP / PCI CONFIGURATION	56
4.7	PC HEALTH STATUS	58
4.8	FREQUENCY/VOLTAGE CONTROL	60
4.9	LOAD FAIL-SAFE DEFAULTS OPTION.....	61
4.10	LOAD OPTIMIZED DEFAULTS OPTION	61
4.11	SET PASSWORD	61
4.12	SAVE & EXIT SETUP.....	61
4.13	EXIT WITHOUT SAVING.....	62
4.14	CLEAR CMOS	62
5.	DRIVERS AND UTILITIES	63
5.1	INTEL 865 CHIPSET DRIVERS.....	63
5.2	EXTREME GRAPHICS 2 VIDEO DRIVERS	63
5.3	LAN DRIVERS	63
5.4	AUDIO DRIVERS	64
5.5	TOUCHPAD DRIVERS	64
5.6	MODEM DRIVERS	64
5.7	CARD READER (7-IN-1) DRIVERS	64
5.8	UTILITY SOFTWARE	64
5.9	INSTALLATION INSTRUCTIONS	65
6.	SERVICE AND SUPPORT	67
6.1	TECHNICAL SUPPORT	67
6.2	ONLINE SERVICES	67
7.	APPENDIX A: PIN DEFINITIONS	68
	CONNECTORS	68
	JUMPER SETTINGS	74
8.	TROUBLESHOOTING GUIDE	75

Table of Figures

FIGURE 1	INDICATOR PANEL	2
FIGURE 2	THE OPTICAL DRIVE SIDE	3
FIGURE 3	THE FRONT SIDE	3
FIGURE 4	THE REAR PANEL	3
FIGURE 5	BACK PANEL CONNECTORS	9
FIGURE 6	DC-IN CONNECTOR	9
FIGURE 7	PS/2 MOUSE PORT, PS/2 KEYBOARD OR POS PORT, USB PORTS, INTERNAL FAX/MODEM PORT (OPTIONAL)	10
FIGURE 8	SECURITY CABLE LOCK SLOT, PARALLEL PRINTER PORT	11
FIGURE 9	VGA PORT, AUDIO DEVICE RCA JACKS	12
FIGURE 10	DVI & S-VIDEO PORTS, PCI EXPANSION SLOT, GbE LAN PORT	13
FIGURE 11	INSTALLING MEMORY	17
FIGURE 12	CPU INSTALLATION	18
FIGURE 13	INSTALLING THE CPU HEATSINK	19
FIGURE 14	INSTALLING THE HARD DISK DRIVE INTO MOUNTING FRAME	20
FIGURE 15	INSTALLING THE HARD DISK DRIVE INTO THE BASE UNIT	21
FIGURE 16	INSTALLING A MULTIMEDIA DEVICE	22
FIGURE 17	INSTALLING THE CARD READER DEVICE	23
FIGURE 18	INSERTING A PCI EXPANSION CARD	24
FIGURE 19	INSTALLING FAX/MODEM CARD	25
FIGURE 20	REMOVING THE KEYTOP MATRIX	26
FIGURE 21	INSTALLING THE SYSTEM FANS	27
FIGURE 22	INSTALLING A REMOVABLE HARD DISK DRIVE	28
FIGURE 23	CMOS SETUP UTILITY – MAIN MENU SCREEN	30
FIGURE 24	STANDARD CMOS FEATURES SCREEN	33
FIGURE 25	IDE CHANNEL 0 MASTER SCREEN	34
FIGURE 26	ADVANCED BIOS FEATURES SCREEN	37
FIGURE 27	CPU FEATURES SCREEN	38
FIGURE 28	HARD DISK BOOT PRIORITY SCREEN	39
FIGURE 29	ADVANCED CHIPSET FEATURES SCREEN	42
FIGURE 30	INTEGRATED PERIPHERALS SCREEN	45
FIGURE 31	ONCHIP IDE DEVICE SCREEN	46
FIGURE 32	ONBOARD DEVICES SCREEN	48
FIGURE 33	SUPER I/O DEVICE SCREEN	50
FIGURE 34	POWER MANAGEMENT SETUP SCREEN	52
FIGURE 35	PNP/PCI CONFIGURATIONS SCREEN	56
FIGURE 36	PC HEALTH STATUS SCREEN	58
FIGURE 37	FREQUENCY/VOLTAGE CONTROL SCREEN	60
FIGURE 38	JP4: CLEAR CMOS MICRO-SWITCH	75

1. ZPC-9000 Introduction

The ZPC-9000 brings you the most cost efficient, space-saving computer and network environment available today. The ZPC-9000 gives you the power and performance of a full-size desktop computer in the space of a standard-size PC keyboard.

This state-of-the-art Zero-Footprint-PC is fully compatible with the Pentium 4 CPU. It allows the installation of up to 2GB DDR266/DDR333/DDR400 memory and one 3.5" Ultra ATA hard drive and also allows the choice of either one Optical Drive (CD-ROM, CD-RW/DVD-ROM, DVD-RW) or one PCI expansion card. Optional features include a 7-in-1 Card Reader and Internal Fax Modem. Standard features include DVI, S-Video, 4 USB ports, two serial ports, one parallel port, and two PS/2 ports.

1.1 Unpacking

The ZPC-9000 comes securely packed in a sturdy cardboard shipping carton. As soon as you receive the computer, open the carton and carefully remove and inspect the contents.

1. The ZPC-9000
2. Quick reference Guide
3. This User Guide on the Drivers CD
4. Drivers on CD-ROM disc
5. External AC 110/220V Power Adapter
6. Power Cord
7. PCI Riser Card (Included with those units that are not shipped with a CD-ROM, CD-R/W or DVD-ROM).

NOTE: After removing the ZPC-9000 from its plastic bag, inspect the unit and the accessories. Contact your vendor immediately in the case of missing or damaged parts.

1.2 The Indicator Panel and Control Buttons

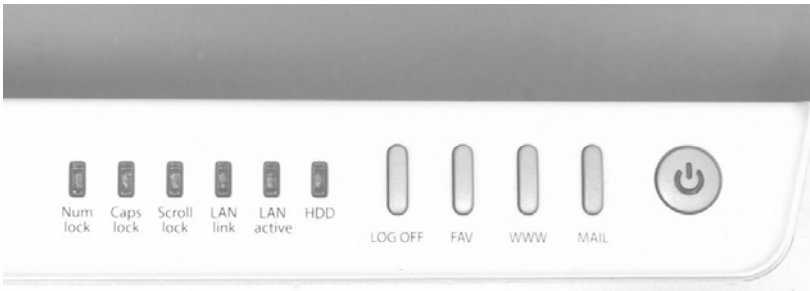


Figure 1 Indicator Panel

There are six LEDs on the ZPC-9000 indicator panel as follows from left to right:

Num lock LED	This LED indicates the on/off status of the Num lock key.
Caps lock LED	This LED indicates the on/off status of the Caps lock key.
Scroll lock LED	This LED indicates the on/off status of the Scroll lock key.
LAN link LED	This LED will light to indicate good Ethernet cable connection.
LAN active LED	This LED will light to indicate Ethernet data flow.
HDD LED	This LED will light to indicate hard disk drive activity.

There are five Control Buttons on the ZPC-9000 indicator panel as follows from left to right:

LOG OFF	Hotkey that launches the MS Windows logon screen prompt
FAV	Hotkey that launches the Default Browser Favorites/Bookmarks
www	Hotkey that launches the Default Internet Browser Application
MAIL	Hotkey that launches the Default EMAIL Application
Power Button	This Button powers the unit On/Off, & launches/recovers the unit into/out of Suspend mode

1.3 The Optical Drive Side

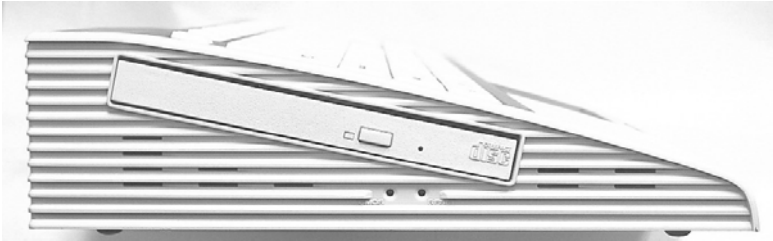


Figure 2 The Optical Drive Side

NOTE: The unit does not ship with an Optical drive unless ordered as such.

1.4 The Front Side

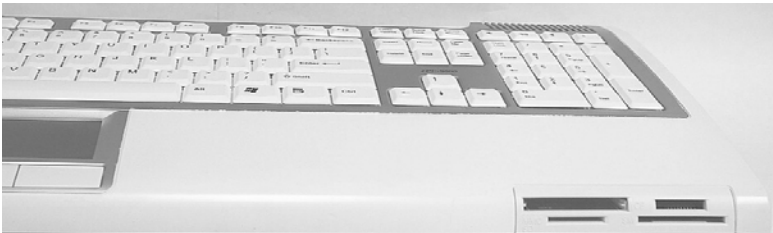


Figure 3 The Front Side

1.5 The Rear Panel



Figure 4 The Rear Panel

1.6 Software Installation Options

Since the ZPC-9000 may be ordered in many configurations, you may have the following possibilities to load software:

- CD-ROM
- 7-in-1 Card Reader
- 56k V90 Modem MDC

If your system was ordered without either of these options, you may load software with an external peripheral via the LAN, USB or Parallel ports.

2. System Overview

2.1 Introduction

The ZPC-9000 incorporates Intel's Pentium 4 or Celeron FCPGA 478-pin CPU socket, providing a high performance/low cost space-saving solution. The ZPC-9000 uses the Intel® 865GV chipset, which supports the Intel® Pentium 4 Processor with Hyper-Threading (HT) Technology, adding intelligence to help manage and prioritize multiple threads received from the microprocessor. The ZPC-9000 system therefore offers high bandwidth interfaces such as dual-channel DDR400 main memory, 800MHz FSB, integrated graphics controller with Intel® Extreme Graphics 2 Technology, Intel® Communication Streaming Architecture featuring a Dedicated Network Bus (DNB) interface for wire-speed Gigabit Ethernet (GbE) and Hi-Speed USB 2.0 connectivity to ensure the flexibility one expects.

In addition to providing the standard VGA interface for analog monitors, the ZPC-9000 also provides a Digital Video Interface Port (DVI) for a standard interface to a digital flat panel monitor. To extend functionality and flexibility, the ZPC-9000 also provides the support for NTSC/PAL S-Video Output to a TV in a Dual display setup. The video Shared System Memory Architecture is implemented using Dynamic Video Memory Technology (DVMT 2.0), which allows up to 96MB of system memory to be shared between the operating system, software applications, and the graphics display.

The ZPC-9000 provides a total communication solution including Gigabit Ethernet (GbE) for networking requirements, and four 480Mbps USB2.0 Hi-Speed ports. The ZPC-9000 also offers an AC'97 compliant interface with Dolby Digital 5.1 surround sound. The built-in fast PCI IDE controller supports up to Ultra ATA/100 function allowing data transfer rates up to 100 MB/sec. It provides independent data paths for two IDE channels that can significantly improve system performance in a multi-tasking environment.

2.2 System Specifications

2.2.1 Hardware

CPU SUPPORT	Supports Intel® Pentium 4, & Celeron CPUs, Speeds of 1.30GHz ~ 3.0GHz FSB supported 800/533/400MHz bus speeds.
MOTHERBOARD CORE LOGIC	Intel® 865GV chipset, ACPI v. 1.0b, and PCI v. 2.2 compliant.
MEMORY	Two 184-pin DIMM sockets support DDR SDRAM from 128MB to 2GB. Supports DDR-400/333/266MHz Dual-Channel un-buffered memory modules.
SYSTEM BIOS	AWARD Flash BIOS supports ACPI, API, DMI, Plug & Play, and security password. Supports booting from HDD, PXE LAN, CDROM and ANY USB bootable device.
VIDEO & GRAPHICS	Integrated graphics accelerator, Up to 96MB Dynamically Shared VRAM. Support for DVI, & S-Video (NTSC/PAL).
NETWORKING	Built-in Gigabit Ethernet (GbE) LAN Adapter.
AUDIO	On-board AC'97 2.2 compliant 3D audio, SoundBlaster Pro compatible. Two built-in stereo speakers with Three audio jacks for Audio Out, Line-In, and Microphone.
USB 2.0 SUPPORT	Four USB 2.0 ports, transfer rate up to 480Mbps. Also supports full-speed (11Mbps) and low speed (1.5Mbps) USB devices.
7-in-1 CARD READER	Supports Compact Flash card/IBM Microdrive, Secure Digital card/Multimedia card reader, Smart Media card, Memory Stick/Memory Stick Pro
EXPANSION SLOT*	One 32-bit PCI expansion slot supports a single half-length (5.25"), low profile PCI card.

CD/DVD DRIVE *	Supports one optional slim CD-ROM/RW, or DVD-ROM/RW Internal Optical Drive. *NOTE: There is ONE PCI Expansion slot. Use of this space for an Optional CD-ROM or DVD-ROM will eliminate the ability to install a PCI card.
HDD CONTROLLER	Supports one 3.5" ATA/ATAPI HDD to ANY capacity with enhanced IDE (PIO mode 4) or bus master Ultra ATA 33/66/100 mode drives.
FAX/MODEM	Supports an optional built-in 56K / V.90 software data fax/modem.
I/O PORTS	2 x Serial, 1 x PS/2 Mouse, 1 x POS or PS/2 keyboard, 4 x USB 2.0, 1 x EPP/ECP Parallel, 1 x Headphone (Audio-Out), 1 x Microphone, 1 x Line-In, 1 x DVI, 1 x S-Video (NTSC/PAL).
TOUCHPAD	Built-in Two-button Touchpad with Vertical and Horizontal scroll areas.
KEYBOARD	Full-Size Enhanced Windows keyboard, detachable keytop matrix, with Audio volume controls, and Sleep/Suspend mode keys. With Num Lock, Caps Lock, Scroll Lock on/off LEDs.
CONTROL PANEL LED INDICATOR & BUTTONS	Power, Suspend/Resume, HDD, LAN activity, LAN Link, 10/100/1000 Mbps LAN LINK. Buttons for LOGOFF, FAV, WWW, MAIL Windows hotkeys.
POWER SUPPLY	Uses 120Watt AC Adapter. Input: 100~240V AC, 50-60Hz universal. Output: 19V DC, 6.3A, 120W. Controlled by Dual Mode Power Button.
SECURITY	Award BIOS System POST and BIOS setup password protection. Security Lock Slot is on the back of the system case.
DIMENSIONS	18.25" W x 8.5"D x 0.5" H front, 2.75" H rear.
WEIGHT	7.4 lbs (3.4kg). 1.1lbs (0.5kg) Power Adapter.
OPERATING ENVIRONMENT	Ambient Temperature: 0° C - 50° C (operating)
O/S COMPLIANCE	MS Windows XP/2000/9X, LINUX.

2.2.2 Power Management

Compliant with EPA, APM 1.2 and ACPI, ATX soft on/off power control
Power on by keyboard and PS/2 mouse
Power on by external modem ring
Power on by alarm
Power on by Wake On LAN (WOL)
Fan off in sleep mode

2.2.3 System Management

CPU temperature warning and system temperature detection
CPU and system voltage detection
System fan RPM detection and thermal control
CPU voltage auto-detection

2.2.4 Software

AWARD PCI BIOS
4M-bit Flash BIOS
Supports APM, Plug and Play, Multi-Boot including PXE, DMI and EIDE devices
Supports ACPI

2.2.5 Environment

Ambient Temperature	0°C - 50°C (operating)
Relative Humidity	0 to 85% (operating)
Vibration	0 to 500 Hz

2.3 Back Panel Connectors

The back panel provides external access to the following connectors (as seen from left to right):



Figure 5 Back Panel Connectors

2.3.1 DC-IN Connector

Connect the External Power Supply here.

2.3.2 Serial Ports (COM1 & COM2)

Connect a serial device such as a mouse or modem to the 9-pin serial ports.



Figure 6 DC-IN Connector

2.3.3 PS/2 Mouse Port

Connect a PS/2 mouse to the green 6-pin mini DIN connector. The system will automatically assign IRQ 12 to the PS/2 mouse if one is connected.

To enable the use of this port, make the following CMOS changes:

1. Hold down the key immediately during system POST to display the "CMOS SETUP UTILITY" screen, which provides access to the utility's various functions.
2. Select Advanced BIOS Features, and change PS2 Mouse Function For: PS2 Mouse instead of the default: Touch Pad.
3. Press F10 to Save and Exit the CMOS setup utility.

2.3.4 PS/2 Keyboard or POS Port

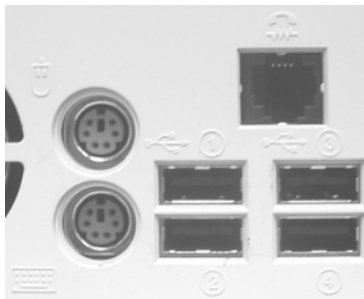
Connect a PS/2 keyboard or a POS device to the purple mini DIN connector. An adapter must be used to connect a standard AT size (large DIN) connector.

2.3.5 Internal Fax/Modem Port (Optional)

This connector is used for an optional Internal Fax/Modem that is specially designed for our Motherboard and is available from the factory. The connector will not be present if this option is not ordered. A punch-out panel will occupy the space.

2.3.6 Universal Serial Bus Ports

You can connect four USB devices from the Universal Serial Bus Ports. The four USB 2.0 ports have a transfer rate up to 480Mbps and have an integrated 2 UHCI host controller for full-speed (11Mbps) and low-speed (1.5Mbps) USB devices.



**Figure 7 PS/2 Mouse Port ♦ PS/2 Keyboard or POS Port ♦ USB Ports
♦ Internal Fax/Modem Port (Optional)**

2.3.7 Security Cable Lock Slot

The Security Cable Lock Slot is provided so you may use a standard Notebook Cable Lock accessory if desired.

2.3.8 Parallel Port

Connect a printer or other parallel device to the 25-pin parallel port.



Figure 8 Security Cable Lock Slot ♦ Parallel Printer Port

2.3.9 VGA Ports

Connect an external monitor to the blue 15-pin VGA port.

2.3.10 Audio Port Connectors

These connectors are located on the back side of your unit. You can connect various audio devices to these audio jacks as follows:

- **Headphone** - Connect headphones or external speakers.
- **Line-In** - Connect any audio source to record audio onto your computer or to play audio through your computer's sound chip and speakers.
- **Microphone** - Connect a microphone to record audio to your computer.



Figure 9 VGA Port ♦ Audio device RCA jacks

2.3.11 DVI/S-Video Ports

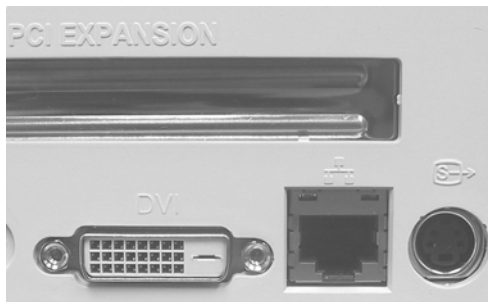
These connectors will provide DVI and S-Video output signals to a standard Digital Video Monitor or a television as a display device.

2.3.12 PCI Expansion Slot

The PCI Expansion Slot will accommodate a third party PCI expansion card. The slot will be covered by a punch-out panel.

2.3.13 Gigabit Ethernet (GbE) LAN Port

Connect RJ-45 Ethernet Cable here.



**Figure 10 DVI & S-Video Ports ♦ PCI Expansion Slot
♦ Gigabit Ethernet (GbE) LAN Port**

3. Hardware Installation & Replacement

This chapter explains how to use your ZPC9000 to build a powerful computer as well as how to replace components that are already populating the system. If you are replacing existing components, read *all* of the instructions in the “Building a Bare Bone System” section 3.1.1 and 3.1.2 *FIRST* and then go to the section that applies to the component you wish to replace.

3.1 Building a Bare-Bone System

At a minimum, you will need the components listed below in order to build a fully functioning system.

Before using your computer, you must complete the following steps:

- Install Memory Modules.
- Install the CPU.
- Install Peripheral Devices.
- Connect Case Fans and Power Adapter.
- Turn on the unit and setup the BIOS.

NOTE: Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damaging your computer.

3.1.1 PHYSICAL ORIENTATION

All directions provided are presuming a physical orientation of the computer as if you were the user with the touch pad in the lower left and the on/off button in the top right corner. You are supplied with all necessary Phillips screws for the hard disk drive installation and for the system case.

3.1.2 REMOVING THE KEYTOP (Opening the Computer)

Warning:

- ◆ *If the unit is plugged in, power flows continuously to the unit whether or not it is actually turned on.*
- ◆ *Proper disconnection of power must take place before the unit is opened for any reason.*

NOTE: To protect the system components from static electricity a grounded wrist strap or equivalent precaution is recommended. Whenever components are removed from the system they must be placed in an anti-static bag or on a grounded surface.

1. Turn over the ZPC-9000 and remove the five Phillips head screws from the base, plus the two screws on the back of the unit. Bare bone units ship unassembled, so this step is not necessary if the unit has not yet been populated with components.
2. Turn the keyboard right side up and lift the center front of the Keytop being careful of the wire connections that remain inside. Lift the rear of the Keytop forward and upwards to clear the connectors on the back of the unit.
3. Before fully removing the Keytop, be sure to disconnect the three cables that connect the Keytop to the Motherboard. They are:
 - a. The 20-way Ribbon cable from the keyboard controller PCB CN7 in the Keytop, connected to header CN9 on the Motherboard
 - b. The four wire audio cable from the Optical drive I/O board to CD1 on the Motherboard.
 - c. The 40-way Ribbon cable from the Optical drive in the Keytop connected to IDE2 on the Motherboard.
4. Once you have disconnected the cables, you can lift the Keytop off the computer and set it aside.

3.2 Memory Installation

Maximum system memory supported by the ZPC-9000 is 2.0 GB. The ZPC-9000 has two DDR Sockets. Memory can be installed using two 184-pin DDR DIMM memory modules. There are no jumper settings required for the memory size or type, which is automatically detected by the BIOS. Memory modules must meet the following requirements:

FSB SPEED	DDR SPEED
400 MHz	PC2100 DDR-266
533 MHz	PC2700 DDR-333
800 MHz	PC3200 DDR-400

1. First remove the Keytop as instructed in Section 3.1.2 being careful to follow instructions regarding the disconnection of power.
2. To install memory, line up the bottom of the memory with the pattern notches on the memory slot (it will only go in one way). Depress the memory into the slot and the clips will click into place.

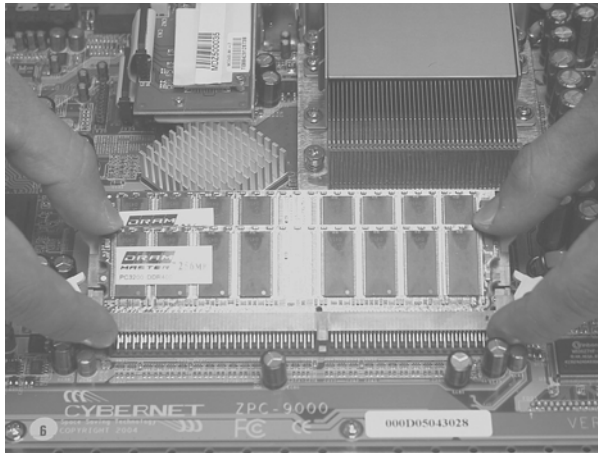


Figure 11 Installing Memory

Install the 184-pin DDR modules in any combination as follows:

BANK 0 (DIMM1)	128/256/512/1024MB
BANK 1 (DIMM2)	128/256/512/1024MB
Total System Memory	128MB – 2GB

3.3 CPU and CPU Heatsink Installation

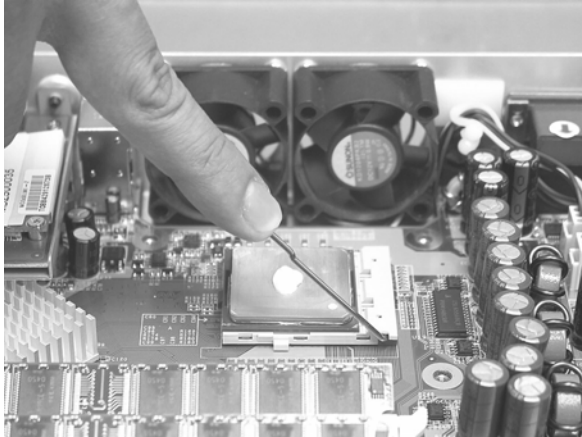


Figure 12 CPU Installation

3.3.1 CPU Installation Procedure

1. On the motherboard, identify the mPGA478B CPU Socket.
2. Push the CPU socket lever slightly to the side and then raise it as far as it can go.
3. Identify the pin-1 corner of the mPGA478B socket. The pin-1 corner is on the same side as the locking lever, as shown in the picture above.
4. Identify the pin-1 corner of the processor (the pin-1 corner on the processor has a beveled edge).
5. Align the pin-1 corners and drop the processor into the mPGA478B socket. The processor should drop into place without any force. If it doesn't seat properly, check that you have the pin-1 corner in the correct position.
6. Swing the locking lever down to lock the processor in place and latch the lever under the catch on the side of the socket.
7. The Heatsink only fits one way over the CPU. Center the Heatsink over the CPU aligning the four screws. Screw in the Heatsink diagonally being careful not to use force.

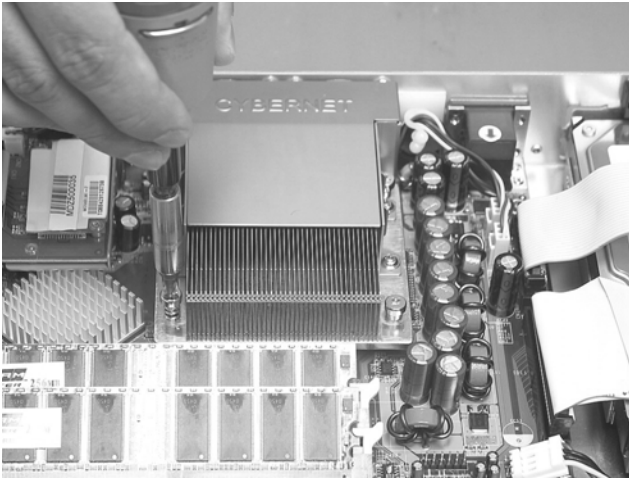


Figure 13 Installing the CPU Heatsink.

Configuration of the processor is carried out using the system setup utility. Configure the processor the first time you turn on the assembled computer.

3.3.2 Removing the CPU and Heatsink

To remove the CPU from the Motherboard, follow these steps:

1. Remove the Heatsink by unscrewing the four screws holding it in place and gently lifting it off the CPU.
2. Push the CPU socket lever slightly to the side and then raise it as far as it can go. You will feel a resistance as the CPU is freed from the socket.
3. Remove the processor.

3.4 Installing Peripheral Devices

3.4.1 Installing an IDE Hard Disk Drive

An 80-wired IDE drive ribbon cable supports the Ultra ATA format hard disk drive. This hard drive can be any capacity as long as it matches the 3.5" form factor of the ZPC-9000 hard drive mounting bracket. Consult the documentation that came with your IDE drive for details on jumper locations and settings. You must orient the cable connector so that the pin 1 red edge of the cable corresponds to pin 1 of the IDE connector.

1. Install the metal bracket onto the hard disk drive using the flathead Phillips screws provided.
2. Insert the hard disk drive into the base unit as shown.

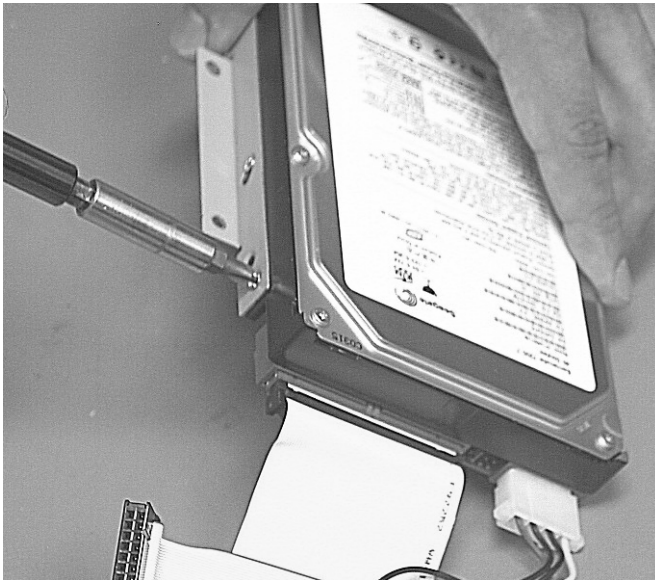


Figure 14 Installing the Hard Disk Drive into Mounting Frame

3. Connect the 80-pin ribbon cable connector to the hard disk drive and IDE1 on the motherboard.

4. Connect the 4-wire power cable to the left side of the hard disk drive and CN11 on the motherboard.

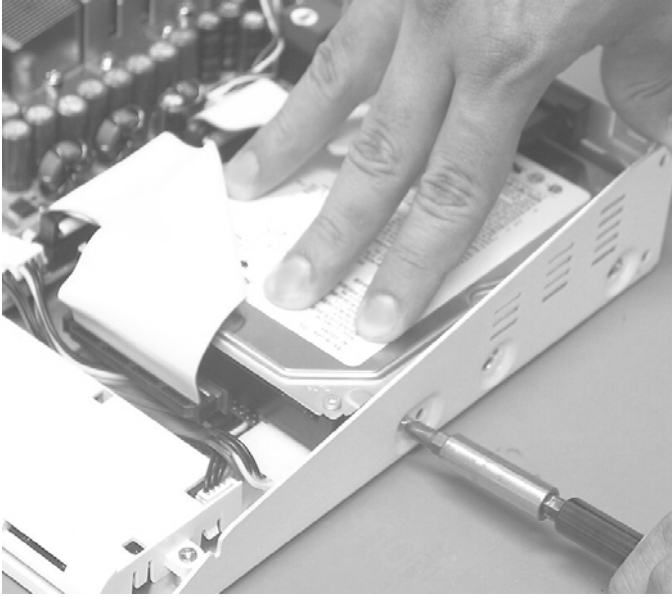


Figure 15 Installing the Hard Disk Drive into the Base Unit

5. Slide the hard disk drive into position to install the mounting screws both on the base of the unit and on the right side of the case.
6. Attach the LPT1 Parallel Printer cable connector to motherboard header CN10.

3.4.2 Installing a Multimedia Device

The multimedia device can be any slim type CD-ROM, CD-RW, DVD-ROM, or DVD-RW drive. Connect the 40-wire ribbon cable from the multimedia device to the IDE2 connector on the motherboard.

1. First, remove the Keytop as instructed in Section 3.1.2.
2. Then, remove the blanking plate from the left side of the Keytop by pushing in the center to pop it out of the notches on the side.
3. Lining up the device door flush with the opening in the left side of the Keytop, install the device with the two Phillips screws provided.
4. Attach the 40-wire ribbon cable to the IDE2 connector on the left front of the Motherboard. Attach the 4-wire device Audio cable to the CD1 connector on the motherboard.
5. The Plug and Play BIOS will auto detect the device without any software configuration.



Figure 16 Installing a Multimedia Device

3.4.3 Installing a 7-in-1 Card Reader USB Device

1. Remove the Keytop as instructed in Section 3.1.2.
2. Insert the 7-in-1 Card Reader device into the unit, and secure with the Phillips screws provided.
3. Attach the 4-wire cable from 7-in-1 to connector CN12 on the motherboard.

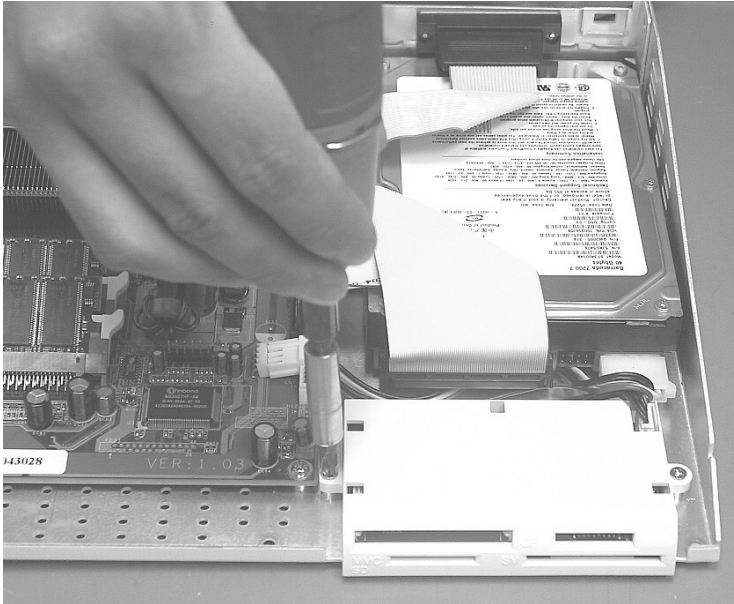


Figure 17 Installing the Card Reader Device

3.4.4 Installing a PCI Expansion Card

1. Remove the small plastic cover (located to the left of the PCI plastic punch out) from the outside rear of the computer located above the LAN/Audio/VGA ports. (One screw on the left of the cover).
2. Remove the Keytop as instructed in section 3.1.2.
3. Remove and discard the plastic punch out blanking plate from the cover and set cover aside.
4. Install the PCI slot riser card to the Motherboard edge connector by lining up the edges and sliding it on. Look first to make sure you have the card lined up correctly as it only fits one way.
5. Insert the PCI card.
6. Replace the Keytop.
7. Replace the small plastic cover on the outside of the keytop to the left of the PCI card with the Phillips screw provided.

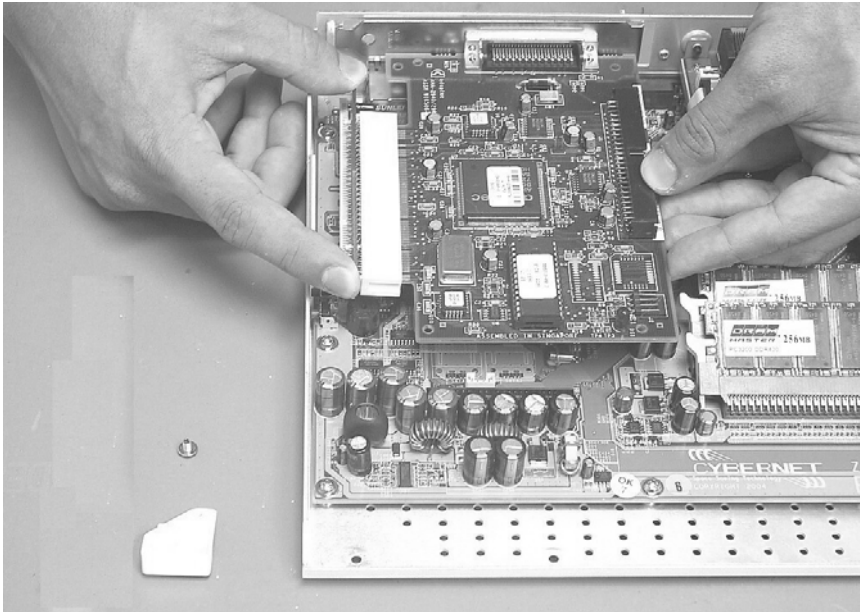


Figure 18 Inserting a PCI Expansion card

3.4.5 Installing a Fax/Modem card

1. Remove the Keytop as instructed in section 3.1.2.
2. Replace motherboard screw with metal standoff for modem PCB.
3. Install Modem board, connecting ribbon cable to the header CN8 on the motherboard making sure to line up the header and connector correctly.
4. Mount and screw modem card to Riser PCB.
5. Install the two Phillips screws to the Modem board from the outside of the system case.
6. Remove corresponding punch out panel from keytop before replacing the keytop on the unit.

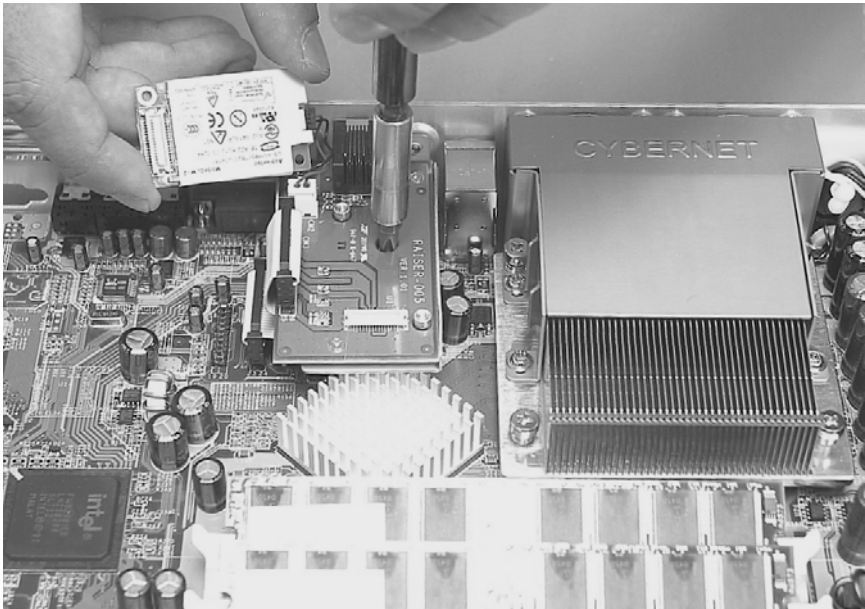


Figure 19 Installing Fax/Modem card

3.5 Removing the Keyboard Matrix & Controller PCB

1. Remove the Keytop as instructed in section 3.1.2.
2. Remove keyboard controller board and unfasten flex cable.
3. Remove CD/DVD drive if present.
4. Remove six Phillips screws to release keytop matrix.

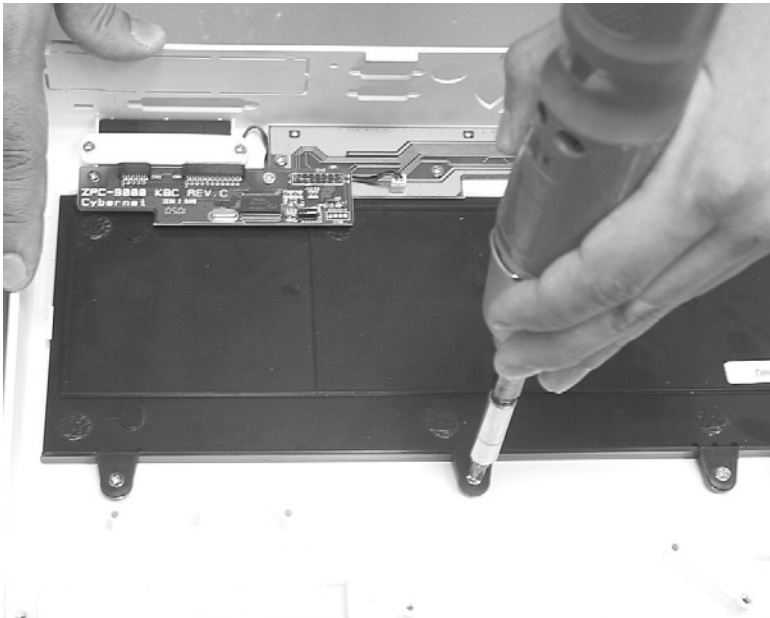


Figure 20 Removing the Keytop Matrix

3.6 Replacing the System Fans

There are two system fan connectors (FAN1, FAN2) on the ZPC-9000 Motherboard. The system supports two 12V DC (0.9W) fans.

You may replace the system fans as follows:

1. Remove the CPU & Heatsink as shown in section 3.3.
2. Disconnect the system fans power connectors at FAN1 and FAN2 locations on the Motherboard.
3. Remove the 8 Phillips fan screws and slide the system fans up and out of the system case.
4. Insert the new system fans, replace the 8 Phillips screws and connect the system fan wires to the FAN1 and FAN2 headers on the Motherboard.
5. Replace the CPU & Heatsink as shown in section 3.3.



Figure 21 Installing the System Fans

NOTE: The unit ships with the fans installed and already connected.

3.7 Installing a Removable Hard Disk Drive

1. Remove existing internal hard disk drive if one is present.
2. Assemble the Removable HDD kit with a 2.5" HDD, as instructed with its accompanying documentation.
3. Break the Removable HDD punch-out both in the metal case, and the keytop plastic.
4. Install the removable HDD kit as instructed in section 3.5.1, Installing an IDE hard disk drive.



Figure 22 Installing a Removable Hard Disk Drive

3.8 Closing the System

Carefully reverse the process of opening the system. Be sure to make the Motherboard connections as follows:

- a. The 20-way Ribbon cable from the keyboard controller PCB CN7 in the Keytop must be connected to header CN9 on the Motherboard.
- b. The four wire audio cable from the Optical drive I/O board must be connected to header CD1 on the Motherboard.
- c. The 40-way Ribbon cable from the Optical drive interface in the Keytop must be connected to header IDE2 on the Motherboard.

Make certain that the back of the Keytop clears the back connectors, and carefully lower the Keytop over the base unit. Then turn over the unit and replace the five Phillips screws to the bottom, plus the two screws on the back of the unit.

NOTE: Upon hardware configuration completion, CMOS setup should be run to ensure that the system information is correct.

4. CMOS Setup Utility

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources such as SDRAM and the external cache. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

The ZPC-9000 employs the latest Award BIOS CMOS chip with support for Windows Plug and Play and Intel Hyper-Threading. This CMOS chip contains the ROM Setup instructions for configuring the ZPC-9000's BIOS. The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters. These parameters are stored in non-volatile battery backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

Easy-to-use pull down menus allow you to configure such items as:

- Hard drives, optical drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the Setup program directly affect how the computer performs. It is important, therefore, first to try to understand all the Setup's options, and second, to make settings appropriate for the way you use the computer. This chapter provides clear explanations for all Setup options.

This program should be executed under the following conditions:

- When changing the system's First Boot Device or resetting the system clock
- When a configuration error is detected by the system and you are prompted to make changes to the Setup program
- When redefining the communication ports to prevent any conflicts
- When making changes to the Power Management configuration
- When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power or the system features need to be changed.

4.1 Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks. If an error is encountered, the error will be reported in one of two different ways:

- If the error occurs before the display device is initialized, a series of beeps will be transmitted.
- If the error occurs after the display device is initialized, the screen will display the error message.

After the POST routines are completed, the following message appears:

"Press DEL to enter SETUP"

To access the AWARD BIOS SETUP program, you don't have to wait for the POST process. Hold down the key immediately to display the "CMOS SETUP UTILITY" screen, which provides access to the utility's various functions.

Figure 23 CMOS Setup Utility – Main Menu Screen

Phoenix - AwardBIOS CMOS Setup Utility	
<ul style="list-style-type: none">▶ Standard CMOS Features▶ Advanced BIOS Features▶ Advanced Chipset Features▶ Integrated Peripherals▶ Power Management Setup▶ PnP/PCI Configurations▶ PC Health Status	<ul style="list-style-type: none">▶ Frequency/Voltage ControlLoad Fail-Safe DefaultsLoad Optimized DefaultsSet Supervisor PasswordSet User PasswordSave & Exit SetupExit Without Saving
Esc : Quit F10 : Save & Exit Setup	↑ ↓ → ← : Select Item
Time, Date, Hard Disk Type...	

4.2 Control Key Definitions

Listed below are explanations of the keys displayed at the bottom of the CMOS Setup Utility screen:

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left
Right arrow	Move to the item on the right
ESC key	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the Failsafe Defaults, only for Option Page Setup Menu
F7 key	Load the Optimized Defaults
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

4.3 Main Menu Help

The on-line description of the highlighted setup function is displayed at the bottom of the screen. Press <F1> to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <ESC>.

4.4 CMOS Setup Utility Main Menu

Power on the computer and press immediately to run the CMOS Setup Utility. The setup main menu will appear on the screen.

STANDARD CMOS FEATURES: This setup page includes all the items in standard compatible BIOS.

ADVANCED BIOS FEATURES: This setup page includes all the items of Award special enhanced features.

ADVANCED CHIPSET FEATURES: This setup page includes all the items of chipset special features.

INTEGRATED PERIPHERALS: This setup page includes all onboard peripherals.

POWER MANAGEMENT SETUP: This setup page includes all the items of Green function features.

PNP/PCI CONFIGURATION: This setup page includes all the configurations of PCI & PnP resources.

PC HEALTH STATUS: This setup page auto detects the temperature, voltage and fan speed.

FREQUENCY/VOLTAGE CONTROL: This setup page includes the CPU/SDRAM/PCI frequency settings.

LOAD FAIL-SAFE DEFAULTS: Indicates the most appropriate value for each system parameter to which the system should be set for the safest configuration.

LOAD OPTIMIZED DEFAULTS: Indicates the most optimized value for each system parameter to which the system can be set for the best performance configuration.

SET PASSWORD: Change, set, or disable password allows you to limit access to the system and Setup, or just to Setup.

SAVE & EXIT SETUP: Save CMOS value settings to CMOS and exit setup.

EXIT WITHOUT SAVING: Abandon all CMOS value changes and exit setup.

4.4.1 Standard CMOS Features

If 'STANDARD CMOS FEATURES' is selected from the main menu, the screen pictured below will appear. This menu allows the user to configure the system components such as date, time, hard disk drive, floppy disk drive and display type. The system BIOS will automatically detect the memory size; therefore no setting is needed.

Figure 24 Standard CMOS Features Screen

Phoenix - AwardBIOS CMOS Setup Utility		
Standard CMOS Features		
Date (mm:dd:yy)	Fri, Feb 11 2005	Item Help Menu Level ▶ Change the day, month, year and century
Time (hh:mm:ss)	9 : 43 : 57	
▶ IDE Channel 0 Master	[ST340014A]	
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 1 Master	[None]	
▶ IDE Channel 1 Slave	[CD-224E]	
Video	[EGA/VGA]	
Halt On	[All Errors]	
Base Memory	640K	
Extended Memory	506880K	
Total Memory	507904K	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

DATE: The date format is <day> <month> <date> <year>.

day	The day, from Sun to Sat, determined by the BIOS and is display-only
month	The month, Jan. through Dec.
date	The date, from 1 to 31 (or the maximum allowed in the month)
year	The year, from 1994 through 2079

TIME: The time formats in <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

4.4.1.1 IDE Devices Sub-Menu:

Your computer has two IDE channels (0 and 1) and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel. Press Enter to display the IDE sub-menu:

Figure 25 IDE Channel 0 Master Screen

Phoenix - AwardBIOS CMOS Setup Utility		
IDE Channel 0 Master		
IDE HDD Auto-Detection	[Press Enter]	Item Help
IDE Channel 0 Master	[Auto]	Menu Level >> To auto-detect the HDD's size, head... on this channel
Access Mode	[Auto]	
Capacity	40022 MB	
Cylinder	19158	
Head	16	
Precomp	8	
Landing Zone	19157	
Sector	255	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

IDE HDD Auto-Detection:

Press <Enter> while this item is highlighted if you want the Setup Utility to automatically detect and configure a hard disk drive on the IDE channel. If your system has an IDE hard disk drive, you can use this utility to detect its parameters and enter them into the Standard CMOS Setup automatically. If the auto-detected parameters displayed do not match the ones that should be used for your hard disk drive, you may change them as follows:

IDE Channel 0/Channel 1 Secondary Master/Slave: Change this to Manual.
Access Mode: Change this to LARGE, CHS or LBA.

Do not choose "Large" or "Normal" if the hard disk drive was already fully formatted when you installed it. Select the mode that was used to format it.

IDE Channel 0/Channel 1 Master/Slave:

If you leave this item at **Auto**, the system will automatically detect and configure any IDE devices it finds. If it fails to find a hard disk drive, change the value to **Manual** and change the Access Mode. Then, manually configure the drive by entering the characteristics of the drive in the items below (Capacity, Cylinder, Head, Precomp, etc.). Refer to your drive's documentation or look on the drive if you need to obtain this information.

If a hard disk drive has not been installed select **NONE** and press <Enter>.

CYLINDERS	Number of cylinders
HEADS	Number of heads
PRECOMP	Write precomp
LANDZONE	Landing zone
SECTORS	Number of sectors

Access Mode:

This item defines some special ways that can be used to access IDE hard disk drives such as LBA (Large Block Addressing). Leave this value at **Auto** and the system will automatically decide the fastest way to access the hard disk drive.

Press <Esc> to close the IDE device sub-menu and return to the Standard CMOS Features page.

STANDARD CMOS FEATURES (Continued)**Video**

Set this field to the type of graphics card installed in your system. If you are using a VGA or higher resolution card, choose the **EGA/VGA** option.

Setting Options: EGA/VGA (default), CGA 40, CGA 80, MONO

Full Screen Function

Setting Options: Enable, Disable

Halt On

Determines which types of errors will cause the system to halt during boot up.

Setting Options:

NO Errors	The system boot will not stop for any error that may be detected.
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.

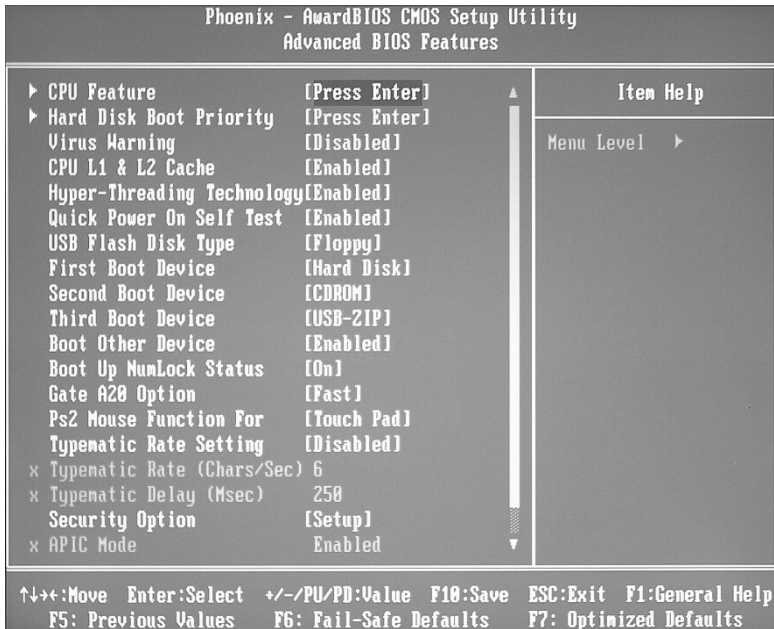
Base/Extended/Total Memory:

These items are automatically detected by the system at start up time. These are display-only fields to which you may not make changes. After you have made your selections in the Standard CMOS Setup screen, press <ESC> to go back to the main screen.

4.4.2 Advanced BIOS Features

Selecting "Advanced BIOS Features" from the main menu screen displays this menu, which allows you to define advanced information about your system. You can make modifications to most of these items without introducing fatal errors to your system. NOTE: This page has a scroll-bar to scroll down to more items.

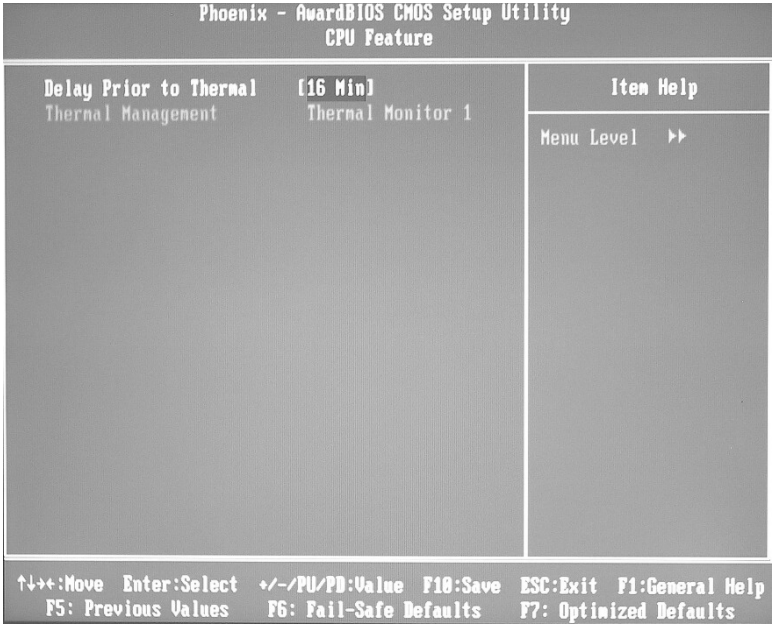
Figure 26 Advanced BIOS Features Screen



The following pages explain the options for each feature:

4.4.2.1 CPU Features Sub Menu

Figure 27 CPU Features Screen

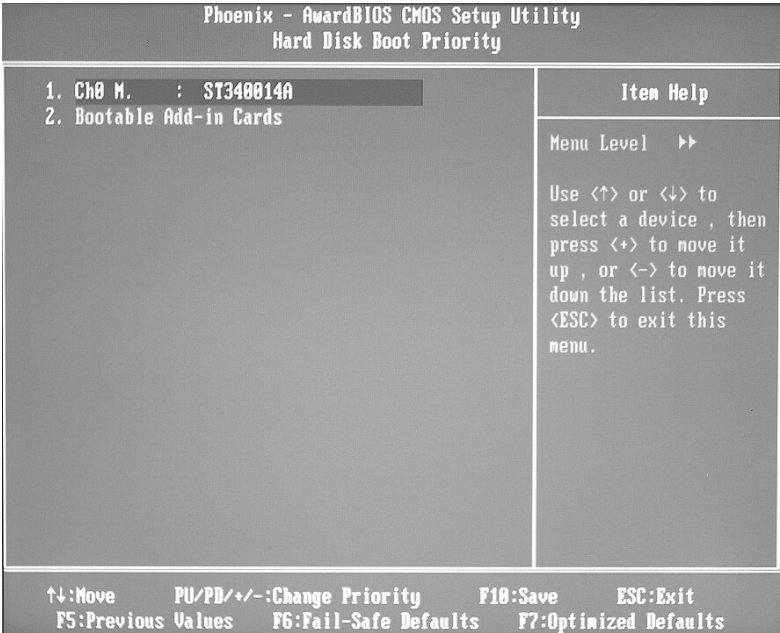


CPU Features

Controls Delay Prior to Thermal, for Thermal Management. The default is 16 Min. This is part of the CPU thermal monitoring system.

4.4.2.2 Hard Disk Boot Priority Sub Menu

Figure 28 Hard Disk Boot Priority Screen



Hard Disk Boot Priority

Allows the selection of an HDD boot device and changing the priority boot sequence of all such devices such as IDE HDD, USB HDD, Bootable Add-in cards (SCSI).

Virus Warning

When enabled, any attempt to write to the boot sector or partition table will halt the system and cause a warning message to appear. If this happens, you can use an anti-virus utility to reboot and clean your system. The default setting is **Disabled**.

CPU L1 & L2 Cache

This Setting enables the CPU internal cache. The default setting is **Enabled**.

CPU L2 Cache ECC Checking

This item enables or disables ECC (Error Correction Code) error checking on the CPU cache memory. The default setting is **Enabled**.

Hyper-Threading Technology

This item is Enabled for Windows XP and Linux 2.4.x (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).

Quick Power On Self Test

This will skip some diagnostic checks during the Power On Self Test (POST) to speed up the booting process. The default setting is **Enabled**.

USB Flash Disk Type

Set BIOS Emulation for USB Device (Auto), set in USB Floppy emulation mode (Floppy), set in USB HDD emulation mode (HDD).

First, Second, Third Boot Device and Boot Other Device:

Use these four items to select the priority and order in which the devices search for an operating system at start-up time. The default settings are **Hard Disk**, **CD-ROM** and **USB-ZIP** respectively. These settings can be overridden during system POST by pressing the ESC key at the Cybernet logo screen. This displays a menu pick list for selecting the required boot device.

Boot Up NumLock Status

If set to Off, the cursor controls will function on the numeric keypad. The default setting is **On**.

Gate A20 Option

This option accesses memory above 1 MB using the fast gate A20 line when set to **Fast** (default). The other option is Normal.

PS/2 Mouse Function For

This setting controls the assignment of the systems PS/2 Mouse port for either the built-in Touch Pad or a PS/2 port connected mouse. The default setting is **Touch Pad**.

Typematic Rate Setting

If set to Enabled, this item enables you to set the Typematic Rate and Typematic Delay. The default setting is **Disabled**.

Typematic Rate (Chars/Sec)

This setting controls the speed at which the system registers repeated keystrokes. The choices range from 6 to 30 Chars/Sec. The default setting is **6 Chars/Sec**.

Typematic Delay (Msec)

This setting controls the time between the display of the first and second characters. There are four delay choices: 250 ms, 500 ms, 750 ms and 1000 ms. The default setting is **250 ms**.

Security Option

This setting controls the password feature. The options are Setup and System. Selecting Setup will protect the configuration settings from being tampered with. Select System if you want to use the password feature every time the system boots up. The default setting is **Setup**. You can create your password by using the "SUPERVISOR/USER PASSWORD" utility in the main program screen.

APIC Mode

Default setting is **Enabled**.

MPS Version Control for OS

Default setting is **1.4**.

OS Select For DRAM > 64MB

Set to OS2 if the system memory size is greater than 64 MB and the operating system is OS/2. The default setting is **Non-OS2**.

4.4.3 Advanced Chipset Features

If the ADVANCED CHIPSET FEATURES option is selected from the main menu, the screen below will appear.

Figure 29 Advanced Chipset Features Screen

Phoenix - AwardBIOS CMOS Setup Utility		
Advanced Chipset Features		
DRAM Timing Selectable [By SPD]		Item Help
x CAS Latency Time	3	Menu Level ▶
x Active to Precharge Delay	8	
x DRAM RAS# to CAS# Delay	4	
x DRAM RAS# Precharge	4	
Memory Frequency For	[Auto]	
System BIOS Cacheable	[Enabled]	
Video BIOS Cacheable	[Enabled]	
Memory Hole At 15M-16M	[Disabled]	
AGP Aperture Size (MB)	[128]	
Init Display First	[PCI Slot]	
** On-Chip VGA Setting **		
On-Chip VGA	[Enabled]	
On-Chip Frame Buffer Size	[16MB]	
Boot Display	[Auto]	
TV Standard	[Off]	
Video Connector	[Automatic]	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

DRAM Timing Selectable

The default setting is By SPD.
If Manual is selected, then DRAM values can be set, such as CAS Latency, Active to Precharge Delay, DRAM RAS# to CAS# Delay, DRAM RAS# Precharge Delay.

Memory Frequency For

The default setting is Auto.

Setting Options: DDR266, DDR333, DDR400.

System BIOS Cacheable

Selecting *Enabled* allows caching of the system BIOS ROM at an address resulting in better system performance. However, if any program writes to this memory area, a system error may result. The default setting is **Enabled**.

Setting Options: Enabled, Disabled.

Video RAM Cacheable

Selecting *Enabled* allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The default setting is **Enabled**.

Setting Options: Enabled, Disabled.

Memory Hole at 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user guides that accompany peripherals that need to use this area of system memory usually discuss their memory requirements. The default setting is **Disabled**.

Setting Options: Enabled, Disabled.

AGP Aperture Size

Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The default setting is **64MB**.

Setting Options: 4M, 8M, 16M, 32M, 64M, 128M, 256M.

Init Display First

This item allows you to decide which bus to activate first (PCI Slot or AGP).

The default setting is PCI Slot.

Setting Options: PCI Slot, Onboard/AGP, On-Chip VGA.

On-Chip VGA

This item allows you to enable or disable the on-board Video adapter chip.

The default setting is **Enabled**.

Setting Options: Enabled, Disabled.

On-Chip Frame Buffer Size

The default setting is **16MB**.

Setting Options: 1MB, 8MB, 16MB.

Boot Display

This item allows you to decide which device to boot up with.

The default setting is **Auto**.

Setting Options: Auto, CRT, EFP, TV, TV, CRT+EFP, CRT+TV.

TV Standard

The default setting is **Off**.

Setting Options: Off, NTSC, PAL, SECAM.

Video Connector.

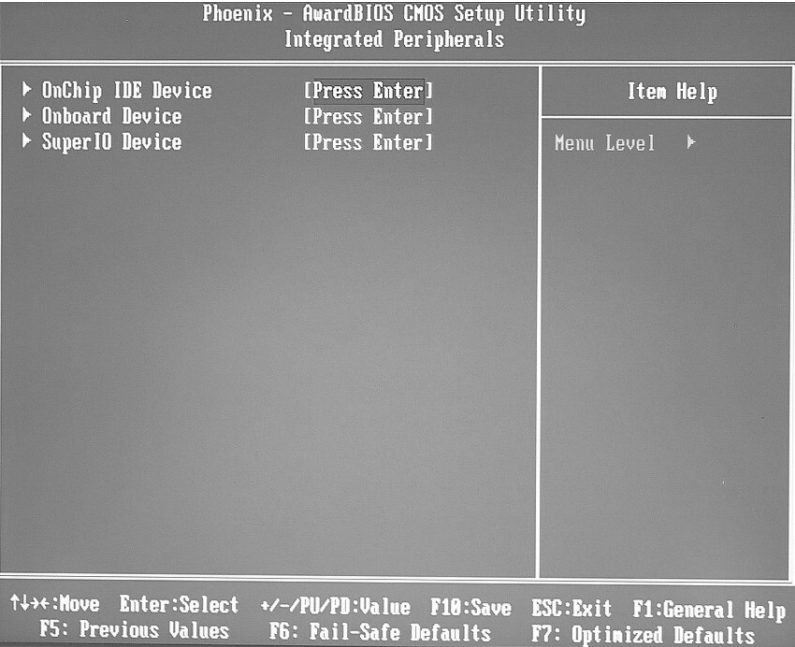
The default setting is **Automatic**.

Setting Options: Automatic, Composite, Component, Both.

4.4.4 Integrated Peripherals

If the **INTEGRATED PERIPHERALS** option is selected from the main menu, the screen below will appear.

Figure 30 Integrated Peripherals Screen



4.4.4.1 Onchip IDE Device Sub Menu

Figure 31 OnChip IDE Device Screen

Phoenix - AwardBIOS CMOS Setup Utility		
OnChip IDE Device		
IDE HDD Block Mode [Enabled]	<div>Item Help</div> <div>Menu Level >></div> <div>If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support</div>	
On-Chip Primary PCI IDE [Enabled]		
IDE Primary Master PIO [Auto]		
IDE Primary Slave PIO [Auto]		
IDE Primary Master UDMA [Auto]		
IDE Primary Slave UDMA [Auto]		
On-Chip Secondary PCI IDE [Enabled]		
IDE Secondary Master PIO [Auto]		
IDE Secondary Slave PIO [Auto]		
IDE Secondary Master UDMA [Auto]		
IDE Secondary Slave UDMA [Auto]		
*** On-Chip Serial ATA Setting ***		
x SATA Mode IDE		
On-Chip Serial ATA [Disabled]		
x Serial ATA Port0 Mode Primary Master		
Serial ATA Port1 Mode Primary Slave		
↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard disk drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support. The default setting is **Enabled**.

Setting Options: Enabled, Disabled.

On-Chip Primary PCI / IDE

This chipset contains an internal PCI IDE interface with support for two IDE channels. If Disabled is selected, none of the fields below can be selected for alteration. The default setting is **Enabled**.

Setting Options: Enabled, Disabled.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In *Auto* mode, the system automatically determines the best mode for each device.

The default setting is **AUTO**.

Setting Options: **Auto, Mode 0, Mode 1, Mode 2, Mode 3, and Mode 4.**

Primary/Secondary Master/Slave UltraDMA

UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 100MB. When you select *Auto* in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device.

Setting Options: **Auto, Disabled.**

IDE Burst Mode

Selecting *Enabled* reduces latency between each drive read/write cycle, but may cause instability in IDE subsystems that cannot support such fast performance. If you are getting disk drive errors, try setting this value to *Disabled*.

The default setting is **Enabled**.

Setting Options: **Enabled, Disabled.**

On-Chip Serial ATA

The default setting is **Disabled**.

Setting Options: **Disabled, Auto, Combined Mode, Enhanced Mode, SATA Only.**

4.4.4.2 Onboard Devices Sub Menu

Figure 32 Onboard Devices Screen

Phoenix - AwardBIOS CMOS Setup Utility		
Onboard Device		
USB Controller	[Enabled]	Item Help Menu Level ▶▶
USB 2.0 Controller	[Enabled]	
USB Keyboard Support	Enabled	
USB Mouse Support	Enabled	
AC97 Audio	[Auto]	
AC97 Modem	[Auto]	
Flash ROM Write	[Enabled]	
LAN Control	[Enabled]	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

USB Controller

The default setting is **Enabled**.

Setting Options: Enabled, Disabled.

USB 2.0 Controller

The default setting is **Enabled**.

Setting Options: Enabled, Disabled.

AC97 AUDIO

Select *Auto* to support AC97 Audio.

Setting Options: Auto, Disabled.

AC97 Modem

Select *Auto* to support S/W Modem.

Setting Options: Auto, Disabled.

Flash ROM Write

The default setting is **Enabled**.

Setting Options: Enabled, BootBlock Lock, Disabled.

LAN Control

This item provides a total communication solution for the GbE built-in LAN Adapter.

The default setting is **Enabled**.

Setting Options: Enabled, Disabled.

4.4.4.3 Super I/O Device Sub Menu

Figure 33 Super I/O Device Screen

Phoenix - AwardBIOS CMOS Setup Utility		
SuperIO Device		
		Item Help
POWER ON Function	[BUTTON ONLY]	
x KB Power ON Password	Enter	
x Hot Key Power ON	Ctrl-F1	
Onboard Serial Port 1	[3F8/IRQ4]	Menu Level >>
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	
x Rx/D , Tx/D Active	Hi,Lo	
x IR Transmission Delay	Enabled	
x UR2 Duplex Mode	Full	
x Use IR Pins	IR-Rx2Tx2	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x EPP Mode Select	EPP1.7	
x ECP Mode Use DMA	3	
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

POWER ON Function

Select method for turning on system.

The default setting is **BUTTON ONLY**.

Setting Options: Password, Hot KEY, Mouse Left, Mouse Right, Any KEY, **BUTTON ONLY**, Keyboard 98.

Onboard Serial Port 1/ Port 2

Select an address and corresponding interrupt for the first and second serial ports.

The default setting for Port 1 is **3F8/IRQ4**, for Port 2 is **2F8/IRQ3**.

Setting Options: Disabled, **3F8/IRQ4**, **2F8/IRQ3**, **3E8/IRQ4**, **2E8/IRQ3**, Auto.

UART Mode Select (Sub menu)

The default setting is **Normal**.

Setting Options: IrDA, ASKIR, Normal.

Onboard Parallel Port

This item allows you to determine the I/O address and the IRQ of the onboard parallel port controller. The default setting is **378/IRQ7**.

Setting Options: Disabled, 378/IRQ7, 278/IRQ5, 3BC/IRQ7.

Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. Select *Normal*, *Compatible*, or *SPP* unless you are certain your hardware and software both support one of the other available modes. The default setting is **SPP**.

Setting Options: SPP, EPP, ECP, ECP+EPP, Normal.

EPP Mode Select

The default setting is **EPP1.7**.

Setting Options: EPP1.7, EPP1.9.

ECP Mode Use DMA

Select a DMA channel for the parallel port for use during ECP mode.

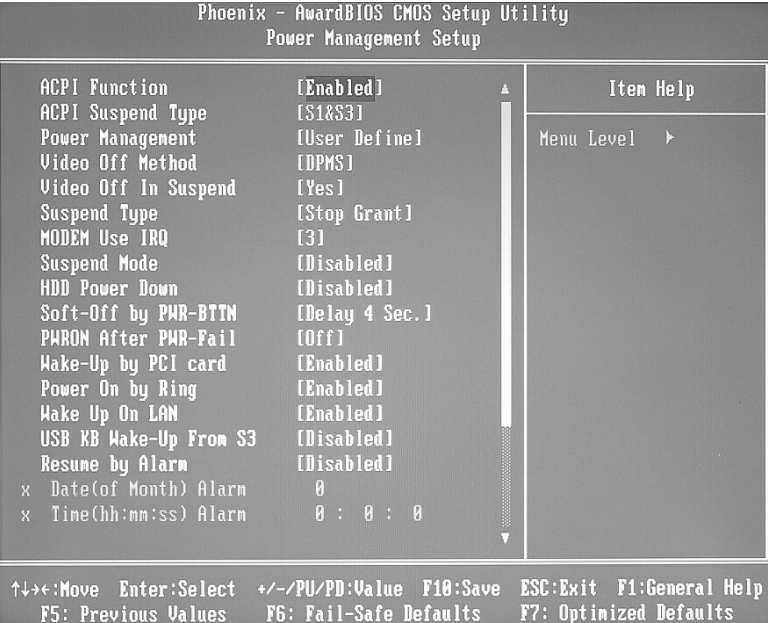
The default setting is **3**.

Setting Options: 3, 1. (Parallel port mode must be set to ECP to access this item).

4.5 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use. If the **POWER MANAGEMENT SETUP** option is selected from the main menu, the screen below will appear.

Figure 34 Power Management Setup Screen



ACPI function

Select *Enabled* if your system has an ACPI function.

Setting Options: **Enabled, Disabled.**

ACPI Suspend Type

Supports S1 = Power Standby, S3= Suspend To RAM , **S1&S3** (Default Setting).

Power Management

The default setting is **User Define**.

Setting Options: **User Define, Min. Saving, Max. Saving.**

Video Off Method

This determines the manner in which the monitor is blanked.

Blank Screen	This option only writes blanks to the video buffer.
V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
DPMS Supported Default Setting	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards to select video power management values.

Video Off In Suspend

When enabled, this feature allows the VGA adapter to operate in a power saving mode. The default setting is **Yes**.

Setting Options: **Yes, No.**

Suspend Type

The default setting is **Stop Grant**.

Setting Options: **PwrOn Suspend, Stop Grant.**

MODEM Use IRQ

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system.

Activity of the selected IRQ always awakens the system.

The default setting is **3**.

Setting Options: **NA, 3, 4, 5, 7, 9, 10, 11.**

Suspend Mode

The default setting is **Disabled**.

Setting Options: **Disabled, 1 – 40minutes, 1 hour.**

HDD Power Down

By default, this item is **Disabled**, meaning that no matter the mode of the rest of the system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes. This means that you can elect to have your hard disk drive be turned off after a selected number of minutes.

Soft Off by PWR-BTTN

You could press the power button for more than 4 seconds forcing the system to enter the Soft-Off state when the system has hung.

The default setting is **Delay 4 Sec.**

Setting Options: **Instant Off, Delay 4 Sec.**

PWRON After PWR-Fail

The default setting is **Off**.

Setting Options: **Off, On, Former-State.**

Wake-Up by PCI card

The default setting is **Enabled**.

Setting Options: **Enabled, Disabled.**

Power On by Ring.

The default setting is **Enabled**.

Setting Options: **Enabled, Disabled.**

Wake Up On LAN

The default setting is **Enabled**.

Setting Options: **Enabled, Disabled.**

USB KB Wake-Up From S3

The default setting is **Disabled**.

Setting Options: **Enabled, Disabled.**

Resume Alarm

When you select *Enabled*, the following fields appear. They let you set the alarm that returns the system to its Full On state.

Month Alarm
Day of Month Alarm
Time (hh:mm:ss)

The default setting is **Disabled**.

Setting Options: Enabled, Disabled.

Reload Global Timer Events (Shown below)**Primary/Secondary IDE 0/IDE 1**

The default setting is **Disabled**.

Setting Options: Enabled, Disabled.

FDD, COM, LPT Po

The default setting is **Disabled**.

Setting Options: Enabled, Disabled

PCI PIRQ[A-D]#

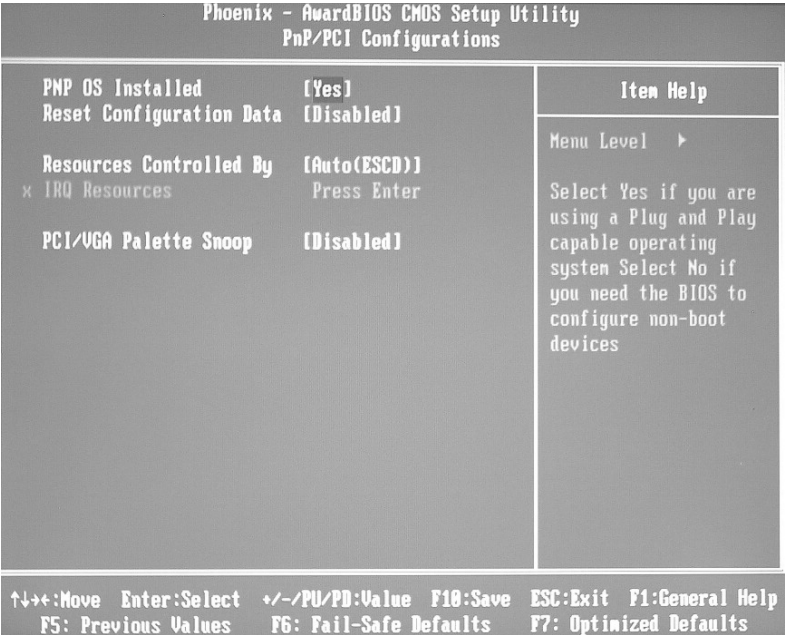
The default setting is **Disabled**.

Setting Options: Enabled, Disabled

4.6 PnP / PCI Configuration

This section describes configuring the PCI bus system. PCI, (Personal Computer Interconnect), is a system that allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

Figure 35 PnP/PCI Configurations Screen



PNP OS Installed

Select Yes if you are using a Plug and Play capable operating system. Select No if you need the BIOS to configure non-boot devices.

The default setting is **Yes**.

Setting Options: Yes, No.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot. The default setting is **Disabled**.

Setting Options: Enabled, Disabled.

Resources Controlled By

BIOS can configure all of the boot and Plug and Play compatible devices. If you choose AUTO, you cannot select IRQ DMA and memory base address fields since BIOS automatically assigns them. Default setting is **AUTO (ESCD)**.

Setting Options: Auto (ESCD), Manual.

IRQ Resources (3, 4, 5, 7, 9, 10, 11, 12, 14, 15)

Available when “RESOURCES CONTROLLED BY” is set to Manual. You may assign each system interrupt as either PCI or RESERVED.

PCI/VGA Palette Snoop

The default setting is **Disabled** and should be left as such.

Setting Options: Enabled, Disabled.

4.7 PC Health Status

This section provides status information about your system including CPU temperature, FAN speed and voltages.

WARNING: Due to the special design of the ZPC-9000, these settings must be left at Factory Default.

Figure 36 PC Health Status Screen

Phoenix - AwardBIOS CMOS Setup Utility	
PC Health Status	
CPU Warning Temperature	[Disabled]
Shutdown Temperature	[Disabled]
VCore (V)	1.48 V
VCC1.5 (V)	1.52 V
VCC3.3 (V)	3.40 V
+ 5 V	5.13 V
+12 V	12.40 V
VBAT(V)	3.24 V
5VSB(V)	5.11 V
Current System Temp.	57°C
Current CPU Temp.	79°C
Item Help	
Menu Level ▶	
</	

CPU Warning Temperature

This item allows you to configure a temperature limit before generating a system beep. If the CPU/System temperature is higher than the limit, the system buzzer is triggered. The default setting is **DISABLED** and should be left as such.

Setting Options: Disabled, 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F, 70°C/158°F

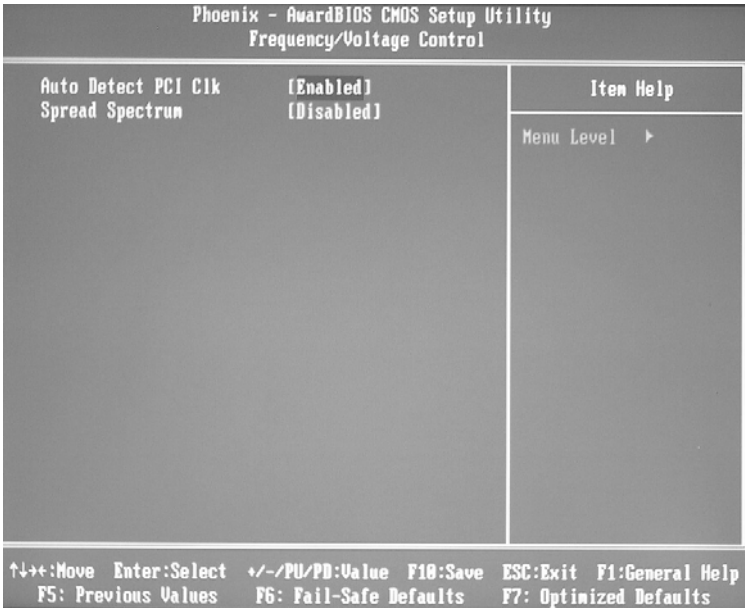
Shutdown Temperature

This item allows you to configure a high temperature limit. If the CPU/System temperature is higher than the limit, the chipset will automatically enter in ACPI S5 state. The default setting is **DISABLED** and should be left as such.

Setting Options: 60°C/140°F, 65°C/149°F, 70°C/158°F, 75°C/167°F

4.8 Frequency/Voltage Control

Figure 37 Frequency/Voltage Control Screen



Auto Detect PCI Clk

This item allows you to enable/disable auto detect PCI Clock.
The default setting is **Enabled**.

Setting Options: Enabled, Disabled.

Spread Spectrum

This item allows you to enable/disable the spread spectrum.
The default setting is **Disabled**.

Setting Options: Disabled, +/- 0.35%, 0.5%, 0.75%, 1.00%.

4.9 Load Fail-Safe Defaults Option

The **FAIL-SAFE DEFAULT** values are the most appropriate for the greatest stability according to the system parameters.

4.10 Load Optimized Defaults Option

The ZPC-9000 is shipped with the Optimized Defaults loaded. This option opens a dialog box that lets you install *optimized* defaults for all appropriate items in the whole Setup Utility to optimize system performance. Highlight the 'LOAD OPTIMIZED DEFAULTS' option, press the <Y> key and then <Enter> to install the defaults. Press the <N> key and then <Enter> to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select that option, and then press the <F7> key.

4.11 Set Password

The "Set Password" utility sets the password. The ZPC-9000 is shipped with the password disabled. If you want to change the password, you must first enter the current password, (if adding one *for the first time*, just press <Enter> when asked for the current password), then, at the prompt, enter your new password. The password is case sensitive. You can use up to eight alphanumeric characters. Press <Enter> after entering the password. At the next prompt, confirm the new password by retyping it and pressing <Enter> again.

To disable the password, press <Enter> instead of entering a new password when the "Enter Password" dialog box appears. A message appears confirming that the password has been disabled.

NOTE: If you have established supervisor and user passwords, only the supervisor password allows you to enter the BIOS Setup Program.

NOTE: If you forget your password, the only way to solve this problem is to clear the CMOS memory as described below.

4.12 Save & Exit Setup

Selecting this option and pressing Y <Enter> will save the new setting information in the CMOS memory and continue with the booting process.

4.13 Exit Without Saving

Selecting this option and pressing Y <Enter> will exit the Setup Utility without recording any new values or changing the old ones.

4.14 Clear CMOS

You may need to clear the CMOS if you are unable to boot-up the system due to a forgotten password, an incorrect CPU clock setup, or the need to reset the CMOS settings to default values after the system BIOS has been updated.

Power off the system and disconnect the power cable.

Locate CMOS recessed pin-hole on the left side of the ZPC-9000 unit. (See figure 38 in the Troubleshooting Guide). Insert unfolded paperclip to depress the micro switch located inside. This will clear the CMOS.

5. Drivers and Utilities

5.1 Intel 865 Chipset Drivers

The ZPC-9000 Utilizes the Intel 865GV chipset, designed to support the Intel Pentium 4 Processor with Hyper-Threading (HT) Technology. The ZPC-9000 drivers CD contains Intel 865 Chipset drivers for:

- Windows XP
- Windows 2000
- Windows 9X

5.2 Extreme Graphics 2 Video Drivers

The ZPC-9000 Utilizes the Intel Extreme Graphics 2 technology integrated video graphics controller. The ZPC-9000 drivers CD contains Intel Extreme Graphics 2 Video drivers for:

- Windows XP
- Windows 2000
- Windows NT4.0
- Windows 9X
- Linux

5.3 LAN Drivers

The ZPC-9000 has a built-in Gigabit Ethernet (GbE) LAN adapter. The ZPC-9000 drivers CD contains Realtek LAN drivers for:

- Windows XP
- Windows 2000
- Windows 98/98SE/ME
- Windows NT4.0
- NDIS2DOS
- Linux
- Diagnostics software

5.4 Audio Drivers

The ZPC-9000 has built-in integrated audio using the Realtek AC'97 Codec. The ZPC-9000 drivers CD contains the Realtek Audio drivers for:

- Windows XP
- Windows 2000
- Windows NT4.0
- Windows 98/98SE/ME

5.5 Touchpad Drivers

The ZPC-9000 has a built-in Synaptics Touchpad. The ZPC-9000 drivers CD contains Synaptics Touchpad drivers for:

- Windows XP
- Windows 2000
- Windows 98/98SE/ME

5.6 Modem Drivers

The ZPC-9000 supports an optional built-in Modem. The ZPC-9000 drivers CD contains Intel 865 Chipset drivers for:

- Windows XP
- Windows 2000
- Windows NT4.0
- Windows 98/98SE/ME

5.7 Card Reader (7-in-1) Drivers

The ZPC-9000 supports an optional built-in 7-in-1 Card Reader. The ZPC-9000 drivers CD contains the Card Reader drivers for:

- Windows 98/98SE/ME
- Windows 2000
- Windows XP

5.8 Utility Software

Award BIOS flash programs for DOS and Windows are included on this drivers CD. Both versions require a system power down, and the manual clearing of the CMOS, in-order to effect any changes.

5.9 Installation Instructions

To install the ZPC-9000 System Chipset, Video, LAN, Audio, Touchpad, Modem, and Card Reader drivers, find the drivers in the correct directory and execute the relevant setup files. Please refer to the readme.txt file under each directory for more drivers information.

NOTE: Recent releases of operating systems always include setup programs that load automatically and guide you through the installation.

6. Service and Support

6.1 Technical Support

If you need technical support, information on products, or updated versions of the BIOS, drivers or utilities, access the Internet and point your browser to:

<http://www.cybernetman.com>.

Select SUPPORT and FAQ-support for answers to most problems, or select Download to access all product Drivers and Utilities software.

If you need further assistance, you can talk with one of our friendly support representatives by dialing one of the following numbers:

Toll free: 888-834-4577 from 8 A.M. to 5 P.M. PST

Tel: 949-477-0300 from 8 A.M. to 5 P.M. PST

Fax: 949-477-0305

Email: support@cybernetman.com

6.2 Online Services

Cybernet Manufacturing Inc. has consistently won recognition for excellence in the design and manufacturing of high quality products. Please visit our website at: <http://www.cybernetman.com> to see the very latest information on all of our exciting, new products. We also provide a wide range of services, information, and help online, including, but not limited to the following:

- Contact Information
- Press/News Releases
- Products/Accessories Information
- Value Added Reseller Information
- Online Purchasing
- Sales/Marketing Media Downloads
- Extended Warranty Information
- Online RMA requests (via SUPPORT, then RMA)

7. Appendix A: Pin Definitions

CONNECTORS

CN6: MINI-DIN PS/2 Keyboard & Mouse Port

Pin No.	Signal	Pin No.	Signal
1	MS Data	7	KB Data
2	N.C.	8	N.C.
3	Gnd	9	Gnd
4	MS Vcc	10	KB Vcc
5	MS Clock	11	KB Clock
6	N.C.	12	N.C.

VGA1: VGA Connector D-SUB VGA

Pin No.	Signal	Pin No.	Signal
1	VGA-RED	9	Vcc
2	VGA-GREEN	10	Gnd
3	VGA-BLUE	11	NC
4	NC	12	DDC Data
5	Gnd	13	Hsync
6	Gnd	14	Vsync
7	Gnd	15	DDC Clock
8	Gnd		

CN7: MINI-DIN 4 (DC-IN) Power Inp

Pin No.	Signal
1	Gnd
2	Gnd
3	VIN(19V)
4	VIN(19V)

PWR1: MINI-PWR4 HDD Power

Pin No.	Signal
1	VCC
2	Gnd
3	Gnd
4	+12V

CN9: KEYTOP INTERFACE Cable Connector

Pin No.	Signal	Pin No.	Signal
1	SPK-RO	2	SPK-LO
3	SPK-RN	4	SPK-LN
5	GND	6	GND
7	TPAD CLK	8	USBP4+
9	TPAD DATA	10	USBP4-
11	5VDUAL	12	5VDUAL
13	5VDUAL	14	PWRBTIN
15	VCC	16	VCC
17	LINKLED	18	GND
19	ACTLED	20	3VSB

CN3: DVI-D Dual Link Port Connector

Pin No.	Signal	Pin No.	Signal
1	TDC2-	13	NC
2	TDC2+	14	VCC
3	GND	15	GND
4	NC	16	HPDET
5	NC	17	TDC0-
6	MDVIS CLK	18	TDC0+
7	MDVIS DATA	19	GND
8	NC	20	NC
9	TDC1-	21	NC
10	TDC1+	22	GND
11	GND	23	TLC+
12	NC	24	TLC-

IDE1: Ultra-ATA HDD Connector

Pin No.	Signal	Pin No.	Signal
1	RESET#	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA10
9	DATA 4	10	DATA11
11	DATA 3	12	DATA12
13	DATA 2	14	DATA13
15	DATA 1	16	DATA14
17	DATA 0	18	DATA15
19	GND	20	NC
21	IDEREQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	ICHRDY#	28	GND
29	DACK	30	GND
31	IDEIRQ	32	NC
33	A1	34	LID
35	A0	36	A2
37	IDECS0	38	IDECS1
39	HDD LED	40	GND

IDE2: Ultra-ATA CD Connector

Pin No.	Signal	Pin No.	Signal
1	RESET#	2	CDGND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA10
9	DATA 4	10	DATA11
11	DATA 3	12	DATA12
13	DATA 2	14	DATA13
15	DATA 1	16	DATA14
17	DATA 0	18	DATA15
19	GND	20	NC
21	IDEREQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	ICHRDY#	28	GND

29	DACK	30	GND
31	IRQ14	32	NC
33	A1	34	LID
35	A0	36	A2
37	IDECS0	38	IDECS1
39	HDD LED	40	GND
41	VCC	42	VCC
43	GND	44	NC

USB1-2: USB Connector 1 & 2

USB1		USB2	
Pin No	Signal	Pin No	Signal
1	USBVCC	5	USBVCC
2	Data-	6	Data-
3	Data+	7	Data+
4	Gnd	8	Gnd

USB3-4: USB Connector 3 & 4

USB3		USB4	
Pin No	Signal	Pin No	Signal
1	USBVCC	5	USBVCC
2	Data-	6	Data-
3	Data+	7	Data+
4	Gnd	8	Gnd

CN11: 7-in-1 Card Reader Connector

USB Card Reader	
Pin No	Signal
1	5VDUAL
2	Data-
3	Data+
4	Gnd

CN1: S-Video MINI-DIN4

Pin No.	Signal
1	Gnd
2	Gnd
3	Y-Out
4	C-Out
5	Gnd
6	Gnd
7	Gnd

COM1/COM2: Serial Port 1 & Serial Port 2

Pin No	Signal	Pin No	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC

CD1: CD Audio Connector

Pin No.	Signal
1	CD-IN GND
2	CD-IN Right
3	CD-IN GND
4	CD-IN Left

FAN1/FAN2: System Fan1 & Fan2 Header

Pin No.	Signal
1	GND
2	12V
3	Speed CTRL

CN8: Modem Daughter Card (MDC) Connector

Pin No.	Signal	Pin No.	Signal
1	NC	13	VCC
2	GND	14	GND
3	GND	15	GND
4	VCC	16	AC_SDIN1
5	MDC_BEEP	17	VCC3
6	NC	18	GND
7	C_DWNEN-	19	GND
8	3VSB	20	AC_SDIN2
9	+12V	21	AC_SDOUT1
10	GND	22	GND
11	GND	23	AC_RESET#
12	AC_SYNC	24	AC_BITCLK

CN10: Parallel Port Connector

Pin No.	Signal	Pin No.	Signal
1	STB-	2	AFD-
3	PD0	4	ERR-
5	PD1	6	INIT-
7	PD2	8	SLIN-
9	PD3	10	Gnd
11	PD4	12	Gnd
13	PD5	14	Gnd
15	PD6	16	Gnd
17	PD7	18	Gnd
19	ACK-	20	Gnd
21	BUSY	22	Gnd
23	PE	24	Gnd
25	SLCT	26	NC

SW1: Clear CMOS Micro-Switch

Pin No.	Signal
1	Clear CMOS
2	GND
3	GND
4	GND

SW2: System RESET Micro-Switch

Pin No.	Signal
1	RESET#
2	GND
3	GND
4	GND

JUMPER SETTINGS

JP1: TV System Selection

1-2	PAL
2-3	NTSC

8. TROUBLESHOOTING GUIDE

1. *No Power/POST. Pressing Power Button has no effect.*

- Open the computer as instructed in section 3.1.2 of this guide.
- Check that the ribbon cable connector from the Keyboard to the header CN9 on the Motherboard is well seated.

If the problem persists:

- Clear the CMOS as instructed in section 4.14 of this guide. See Figure 38 below for the location of CMOS Micro switch.



Figure 38 JP4: Clear CMOS micro switch

2. No Keyboard Response. System boots, LEDs and Mouse work.

- Open the computer as instructed in section 3.1.2 of this guide.
- Check that the ribbon cable connector from the Keyboard to the header CN9 on the Motherboard is well seated.

3. No Network Connection. LAN connection LED is not on.

- Clear the CMOS as directed in section 4.14 of this guide.

4. Invalid Disk Partition /No DHCP or proxyDHCP offers Received.

- Following Power On Self-test (POST) the machine does not boot up any operating system software. This means your Hard Disk Drive is BLANK (no formatted bootable disk partitions).
- Please review your Sales Order or Packing List for the purchase of an Operating System software package. Unless explicitly ordered, units are shipped without any software packages installed, as the purchase of software is optional. Hence, the Hard Disk Drive will be blank.

5. Unable to Boot-Up from a CDROM to Install Operating System.

- Depending on the type of bootable CD used, it may be necessary to make the CDROM drive the First boot device in the CMOS in order to boot up directly from the CDROM drive.
- Enter the CMOS setup as directed in section 4.1 of this guide.
- Go to the Advanced BIOS Features screen. See section 4.4.2.
- Change the First Boot Device to be the CDROM. Press F10 to Save and Exit.